tration effect supervenes; a larger particle will evaporate because the effect of surface tension supervenes.

4. In connection with this simple mechanism for producing stable nuclei of a startling degree of smallness by mere shaking, nuclei which may be without electrical charge, the question naturally arises whether the mechanism is not sufficient to account for nuclei in the presence of saturated vapor, in general.

Suppose therefore that such chemically powerful agencies as the X-rays, or Becquerel rays, or ultra-violet light, or the electric glow, etc., on being passed through a saturated vapor, produce in that vapor a new chemical synthesis in degree, however small (fancy the vapor pressure due to a few hundred nuclei per cubic centimeter!), soluble in the liquid from which the vapor arises. Then immediately around the new molecule there will be a region of vanishing vapor pressure. The new molecule (or ion) will therefore grow by condensing the vapor, until further growth is arrested by the decrement of vapor pressure due to diminishing convexity. In other words, the critical diameter is again reached.

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QUOTATIONS.

THE APPLICATIONS OF ELECTRICITY IN GREAT BRITAIN.

The Institution of Electrical Engineers appointed, about a year ago, a committee to inquire into electric legislation and to recommend, if possible, such action as might assist the electrical industry. Some three weeks ago we gave the general conclusions of the committee, as embodied in a number of resolutions. Its report has now been issued, with a large amount of interesting evidence, extracts from which we publish to-day. There are practically no dissentients from the opinion that electrical enterprise is in a very backward condition in this country. The fact may be differently explained by different people, and no doubt, more than one cause may fairly be assigned. There are a few who rather glory in our backwardness, and try to persuade us that other nations have lost money by going ahead. But however the fact may be explained or regarded, it is universally admitted. In the use of electricity for traction, for lighting, and for the economical supply of power for manufacturing purposes, we are far behind other nations. So much is this the case that, when any demand arises for generating machinery and plant, it is found that there has been no previous demand of such a kind as to produce manufacturers with the requisite appliances and experience. An electric railway or tramway company has to import machinery from America or Germany, because it cannot be supplied at home, or, if supplied at all, is produced with extreme slowness. Things are, no doubt, improving in that respect, though it is not altogether agreeable to reflect that the improvement is largely due to American enterprise. The public are mostly concerned in noting the phenomena of traction and lighting. Yet it may be taken as certain that a far greater aggregate loss to the nation arises from the failure to take due advantage of the immense economy in the production and transmission of power that electricity offers when intelligently applied. The committee finds that the main cause of our backwardness is stupid and restrictive legislation, carried out by legislators having no knowledge of the subject they had to deal with, and allowing themselves to be guided by abstract political or economic theories. In other countries rulers called upon to deal with questions of this kind habitually consult men of science and frame their regulations with some regard to the special nature of the subject-matter. In other words, different forms of national intelligence are coordinated for the national good.—The London *Times*.

CURRENT NOTES ON METEOROLOGY.

MONTHLY WEATHER REVIEW.

The Monthly Weather Review for January (issued April 11), the first number of Vol. XXX., is somewhat changed in external appearance, and the name of Mr. H. H. Kimball as assistant editor is associated with that of Professor Abbe. There is a distinct

improvement in the quality of the paper used, but the general arrangement of the contents remains the same. This number contains the usual titles of recent meteorological papers (we may note that SCIENCE is not published in London, as stated in the *Review*, but in New York), and among the more noteworthy articles the following may be mentioned: Professor F. H. Bigelow: 'A New Barometric System for the United States, Canada and the West Indies' (see SCIENCE, March 14, 1902, 417–421), this being the first of a series of 'Studies on the Statics and Kinematics of the Atmosphere in the United States'; Albert Matthews: 'The Term Indian Summer,' an interesting historical sketch, with copious bibliographical notes; B. C. Webber: 'January Gales from the Great Lakes to the Maritime Provinces' (Mr. Webber being Inspector and Forecast Official of the Meteorological Service of Canada); an account of the work of the Weather Bureau in the West Indies; a short 'History of Meteorological Work in India'; a report on the Third International Congress on Hail Shooting, and a translation of Professor J. R. Plumandon's 'General Report on Hail Shooting,' presented to this Congress. Anyone interested in keeping up with the progress of meteorology will find the *Monthly Weather Review* indispensable. Next to the *Meteorologische Zeitschrift* it is the best general publication on meteorology now issued.

SOME PHYSIOLOGICAL AND OTHER EFFECTS OF SUNSHINE AND SHADE.

SOME very interesting facts regarding certain effects of varying exposures to sunshine are brought out in a recent paper by M. Lugeon, professor at the University of Lausanne, entitled 'Quelques Mots sur le Groupement de la Population du Valais (Etrennes helvetiques pour 1902). A study of the principal valley of the canton, between Martigny and the Rhone Glacier, brings out some evident effects of exposure. Statistics show a population of about 20,000 on the left bank, and 34,000 on the right bank of the river. A part of this difference is doubtless due to the fact that the right bank is less steep, and hence more open to settlement, but the major part is believed by M. Lugeon to result from the difference in the exposure to sunshine. In a certain district in this same valley the slopes on both sides are about equally steep, but the population on the sunny side is about 3,000, while that on the shady side is between 700 and 800. With one or two exceptions, all the villages are on the sunny side. In fact, a certain distinction of classes results from this difference in the conditions of insolation. There is developed an aristocracy of the sun, so to speak. The people who live on the right bank are on the whole more prosperous, and better educated. They of the *Sonnenseite* look with some contempt upon the poor people on the *Schattenseite*. The village of Reckingen contains two real castes, the distinction between which rests ultimately upon the difference in exposure to sunshine.

METEOROLOGICAL ANNUAL OF THE ROYAL BELGIAN OBSERVATORY.

The Annuaire Météorologique of the Royal Observatory of Belgium for 1902 is a useful publication, containing a large amount of tabular matter relating to the meteorology of Belgium for the year; meteorological conversion tables, etc., and two longer articles, one a historical sketch of meteorological work in Belgium, and the other an excellent account of the exploration of the free air, and of the results thus far obtained.

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*THE WEST INDIAN ERUPTIONS AND SOLAR ENERGY.**

IN 1883, in connection with the eruption of Krakatoa, you were good enough to allow me to appeal through your quickly and widely circulated columns for early information to enable me to test an idea connected with the spread of the glorious sunsets round the world which followed the event.

Because the terrible catastrophies in Martinique and St. Vincent occurred at a well de-

* A letter addressed to the editor of the London *Times* by Sir Norman Lockyer.